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ISSUES OF WATER SUPPLY AND SAVING OF WATER RESOURCES OF INDUSTRIAL ENTERPRISES

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Abstract

This article reflects on the water consumption of the towel production industrial firm, the water consumption in product manufacturing, the farm's family water consumption, the challenges of estimating the overall water consumption utilized in irrigation, and the normative standards. Furthermore, the chemical qualities of water from artesian wells, which are regarded as the organization's primary source of water supply, were investigated.

Key words: *distribution map, calculation, routing, pollutants, analysis, situational plan, industrial area, parameters.*

Introduction. Today, tragic circumstances occur as a result of negligent usage of subterranean and open water sources, as well as spring water, as well as the discharge of sewage into open water bodies and the disposal of domestic garbage in inappropriate areas.

Residents of our region's hilly districts of Koshrobot, Urgut, Kattakorgan, Payariq, and Jomboy have been using spring water as therapeutic drinking water.

Methodology. Poor execution of a lot of laws and decrees taken by our government by the populace and commercial entities results in ecological degradation and water pollution. Resolution No. 401 of the Cabinet of Ministers of the Republic of Uzbekistan of October 4, 2001 "On measures to improve the ecological and sanitary epidemiological situation in the basin of the Zarafshon River in the region" and Resolution No. 7 of the Cabinet of Ministers of the Republic of Uzbekistan of April 1992 on the protection of underground and open water sources and spring waters -April 1992 approved by decision No. 174 "Reservoirs and other water bodies, rivers, main can It is also governed by the Water Protection Zones Regulation, which governs drinking water and household water supply zones, water sources utilized in treatment, and cultural-sanitization zones.

Sanitary protection zones, which comprise sanitary protection zones and sanitary protection regions of water supply sources at water intake sites, are specified in order to maintain the sanitary-epidemiological dependability of water collected from subterranean and spring water in water intake facilities. These conditions must be met by all water consumers, and economic activity is forbidden, as is the use and sale of all sorts of harmful chemicals used against plant pests and diseases, as well as weeds. Water use for daily life is rather high in the world's industrialized capitalist countries. In this aspect, the United States is at the forefront. In this country, 99% of the entire population has access to piped water, and daily water use in cities is 330 liters and 250 liters in rural regions.

The continued rise of the economy and population necessitates a larger utilization of fresh water resources. As a result, not only fresh surface water, but also subsurface water sources, are now underutilized. These reserves are being depleted faster than some countries can create them. For example, in 1910, the volume of subsurface water reserves in the United States was 490 km. cubic, but by 1959, it had fallen to 62 km^3. This country's subsurface water supplies are nearly depleted in California, Arizona, and Texas. Groundwater accounts for 80% of the population's water use in the Netherlands and 40% in Germany, for example, in Austria and Denmark.

Result and Discussion. The size and kind of items manufactured in an industrial setting influence water use. The rate of water consumption for the main group or particular types of goods is decided for the most part, taking into account the enterprise's features. The water standard allows for the evaluation of the efficiency of water consumption in each running firm.

The following will be executed as a consequence of the development of the soft feather towel production workshop under "QUASAR" LLC under Jizzakh Plastics JSC.

Cloth preparation workshop. Soft fabric (gauze) is derived from the French word frotte - the third abbreviation meaning "soft natural gauze". Gazlama is constructed of organic cotton, hemp, and bamboo. Cotton is a soft, silky, and absorbent fabric. The greater the length of the principal fiber, the stronger and more absorbent the material. The soft material's foundation is made up of tiny threads. Bamboo may also be used to create a soft feather gypsum substance. The fibers of the material containing bamboo are identified by their luster and smoothness. Material preparation can be created from a single type of raw material or a mixture of source materials (cotton and bamboo, hemp bamboo, hemp cotton).

Towels are made from little and medium fibers. Even after 500 washes, the towels that have been prepared and coloured retain their qualities. As a consequence of the generation of soft feather gas oil by the SC-2200X1000/N-7-672 and QTECH-3600X1250/N-7-672 machines, inorganic dust is discharged into the sky.

Machine data for SC-2200X1000/N-7-672, QTECH-3600X1250/N-7-672, and WTECH-SS-3600X1250: speed 1000 m/min., pressure 6 bars, power 21 kW, shaft diameter 1000 mm. "KUCUKER MAKINA SANYII VE TIKARET A.S." is a Turkish company.

Material viscosity testing department. The department now has high-speed Q-ART SERIES (WITH WEIGHING & BARCODE PRINTER SYSTEM) equipment imported from Turkey. This apparatus is used to monitor the material's quality and density.

Painting shop. The following applications will be deployed on the network: One set of dyeing and pressing equipment, two sets of drying and ironing equipment, a small boiler, and two sets of laboratory measurement instruments.

Appendix 1 of the "Instructions for the Accounting of Sources Emitting Pollutants into the Atmosphere and Pollution Regulation in Enterprises on the Territory of the Republic of Uzbekistan" registered with the Ministry of Justice of the Republic of Uzbekistan on January 3, 2006 with No. 1533 1.7. clause 1.7.2. Butylacetate, hydrocarbon, toluene, and ethylbenzene are among the chemicals emitted into the atmosphere, according to the table.

From heat-resistant Fapromkhid series 700 powder paint, 99.47% of solid particles and 0.53% of volatile components are separated.

A tiny pot is used in the business to dry painted goods. Natural gas use is 79,200 m3 per year. Annex 1 of the "Instructions for the calculation of sources of pollutants in the territory of the Republic of Uzbekistan and the control of pollutants" was registered on January 3, 2006, with No. 1533 1.13 at the Ministry of Justice of the Republic of Uzbekistan. According to paragraph, carbon monoxide and nitrogen oxide are emitted into the environment.

Pollutants discharged into the atmosphere during heating procedures are separated using the technical approach outlined below.

$$M_{NO2} = 0{,}001 * B * Q_н * K_{NO2} * (1\text{-в})$$

Here $Q_н$ – heat of fuel combustion, MDj/kg or MDj/m^3

K_{NO2} – 1 GDj is a parameter characterizing the formation of nitrogen oxide during heat generation, K_{NO2} = 0,005;

в – ифлослантирувчи моддаларнинг пасайиш даражасини ҳисобга олувчи техник коэффициент;

$M_{CO} = 0{,}001 * B * C_{co} * (1 – q_4/100)$, бу ерда

C_{co} – emission of carbon monoxide (gas) when burning liquid (t/year, (g/sec) or gaseous fuel, (thousand m^3/year), г/$м^3$, is determined by the following formula:

$$C_{CO} = q_3 * R * Q_н,$$

q_3, q_4 – a coefficient that takes into account heat loss from mechanical and chemical improper combustion of fuel;

B – fuel consumption, g/sec, t/year;

$Q_н$ – heat of fuel combustion, MDj/kg or MDj/m^3 1 cal = 4.1868 Dj).

q_3, q_4 coefficients are assumed to be 0.5 in the absence of operational data.

When gas is used as fuel, the formula will look like this:

$$M_{CO} = 0{,}001 * B * 0{,}5 * 0{,}5 * Q_н * 0{,}995$$

Material cutting section. Specifications of high speed AZIMO 222 FULL AUTOMATIC LONGITUDINAL HEMMING AND STITCHING and AZIMO 333 FULL AUTOMATIC LONGITUDINAL CUTTING vertical and horizontal slitting machines: 380 V AS 50 Hz 5/6 KW W 4500 mm L:5000 mm, H:3100 mm.diameter 2000 mm . Azim tekstil san.ve tic paz. a.s., Turkey. In these processes, inorganic dust is released into the atmosphere.

Hasham (border) giving department. The multi-head automatic border feeding device TFSN - 915 (680x400) S and the single-head automatic border feeding device TMBP - S1201C (360x500) S from the Japanese company "TAJIMA INDUSTRIES LTD" are installed in the department.

Sewing shop. BML-9300-D4 computerized task machine with high-speed, energy-saving overlock BAOYU BML-6800-D4 sewing machines will be installed in the sewing workshop. Machine specifications: power 550 W, voltage 220 V, frequency 50 Hz, speed 5500 rpm. Inorganic dust is emitted into the atmosphere as a result of the operation of these equipment.

The enterprise's water requirements. Jizzakh Plastics JSC pays for the water used in the factory, which comes from an artisanal well. In regard to the product, according to the technological rule, 50 percent of water is utilized for 1 kilogram of paint powder. The firm has the potential to create 1800 tons of towels of various colors every month. Annual consumption of paint powder is 150 tons. The amount of water used for production was equal to the following:

Q = M*12*50%* = 150*12*50% = 900 m^3/year,

0,9 thousand m^3/year or 3,1 m^3/day.

We determine the water consumption of the communication network based on the water consumption of the installed devices. According to Appendix 2 of QMQ 2.04.01-98 "Domestic water supply" instruction, water consumption was determined as follows.

Device name	Number	Water consumption in 1 hour, liter	total, 1iter/ hour
Sink	4	30	120
Toilet	2	100	200
Total	6		320

The total consumption per hour is 0.32 m3. Toiletries are used for an average of 1 hour per day (at the end of the working day). So, the daily consumption of water is 0.32 m3/day, the annual consumption is 92.8 m3/year or 0.0928 thousand m3/year.

Estimated water consumption for household needs is calculated based on QMQ 2.04.01-97.

Water consumption per worker is 25 l/milk.

25 * 250 employee = 6250 l/day or 6,25 m^3/day.

The number of working days in a year is 290 days.

Then the water consumption in one year:

290 * 6250 = 1812500 l/year or 1812,5 m^3/year or 1,8125 thousand m^3/year.

Consumption of water used in the kitchen

W_{day}= N * r/1000

Here: N- 1 the amount of water used to prepare a portion of food, N = 25 dm^3/ ;

r – the number of seats in the kitchen is 60;

T – number of working days in a year T = 290 days.

W_{day} = 25* 60/1000 = 1,5 m^3/day.

$W_{year} = W_{day}$ T* /1000 = 1,5 * 290/1000 = 0,435 thousand m^3/year.

the amount of water used in the dishwasher:

W_{day} = N * r*t/1000

Here: N- the amount of water used in the washing bath, N = 200 m^3/hour;

r – number of baths, 2;

t – the working hours of the bath in one day, 2 hours;

T – number of working days in a year T = 290 days.

W_{day} = 200* 2 * 2/1000 = 0,8 m^3/day.

$W_{year} = W_{day}$ T* /1000 = 0,8 * 290/1000 = 0,232 thousand m^3/year.

Water for firefighting

There is a 20 m^3 water pool on the premises of the facility, which is used as a firefighting water reserve. The water used in the pool is 10% of the pool volume. Water consumption is equal to the following:

Q = 20 * 10 % = 2,0 m^3/day.

Q_{year} = 2,0 * 365/1000 = 0,73 thousand m^3/year.

Waste water calculation

Wastewater from domestic drinking activities

Wastewater from domestic drinking water makes up 30% of the water used for drinking by employees. In that case, the generated wastewater is equal to the following:

1,875 m^3/day., 0,5437 thousand m^3/year;

Wastewater from kitchen activities

In the kitchen, waste water makes up 40% of the water used for cooking, and 100% from the washing bath. In that case, the generated wastewater is equal to the following:

1,4 m^3/day., 0,406 thousand m^3/year;

Sewage generated from the communication network

Sewage generated from the communication network makes up 100% of the consumed water. In that case, the generated wastewater is equal to the following:

0,32, 0,0928 m^3/year;

The water needs of the enterprise are presented in the table below.

Consumers name	Daily consumption of water (m^3/day)	Annual amount of water used (thousand m^3/year)
Economy-beverage	6,25	1,8125
Household	0,32	0,0928
To manufacture	3,1	0,900
To the kitchen	2,3	0,667
Fire reserve	2,0	0,73
Total water consumption	13,97	4,2023
Total wastewater consumption	3,595	1,0425

Conclusion and Recommendation. Sewage generated at the facility is connected to the sewerage network of Jizzakh Plastics JSC and is discharged into the Jizzakh city sewerage network. The amount of generated wastewater is 3,595 m^3/day, 1,0425 thousand m^3/year.

Rainwater is channeled through concrete gutters to local canal networks.

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